

Notice of Allowability

Application No.

10/697,670

Examiner

Benny Q. Tieu

Applicant(s)

RAMBO, DARWIN

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Patent Application filed on October 29, 2003.
2. ☒ The allowed claim(s) is/are 1-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Reasons For Allowance

1. The following is an examiner's statement of reasons for allowance: White et al. (U.S. Patent No. 6,192,134) teach a directional adaptive microphone that is embodied in two or more monolithic chips. At least one monolithic detection unit includes at least one integrated transducer for detecting the sound signals, and a processor for executing local digital signal processing (DSP) programs to generate a signal representing the sound information of the sound signals. A monolithic base unit includes a processor for executing global digital signal processing (DSP) programs based on the sound information received from the detection unit(s) to generate globally processed sound information (column 2, lines 22-35). Beaucoup et al. (U.S. Patent Application Publication No. 2004/0125942) teach a single acoustic echo canceller is provided at the output of the beamformer. Information is saved to (and retrieved from) memory that characterizes each of a finite number of look directions, or regions of focus, covering the entire spatial span of the conferencing device. Each time a change occurs from a first look direction to a second look direction, information relating to the workspace captured by the full-duplex acoustic echo cancellation algorithm is saved for the first look direction, and previously saved information for the second look direction is retrieved from memory. The acoustic echo cancellation then takes place for the new region of focus (i.e. the second look direction) with the retrieved information (paragraph [0013]). However, prior art of record fails to teach, or renders obvious, alone or in combination, an audio conferencing system comprising at least one loudspeaker for converting a first electrical signal into sound, a plurality of conference stations in spaced relation, and a signal processor. Each of the plurality of conference stations may comprise a directional microphone for converting sound into a directional microphone signal,

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and the directional microphone signals collectively form a plurality of directional microphone signals. The signal processor modifies at least one of the plurality of directional microphone signals and a receive signal, and produces at least one of a transmit signal and the first electrical signal as recited in independent claim 1. Prior art of record fails to teach, or renders obvious, alone or in combination, a method of operating an audio conferencing system. The method comprises receiving a first electrical signal, and transducing each of a plurality of sound fields into a microphone signal. The microphone signals collectively form a plurality of microphone signals. The method comprises processing at least one of the plurality of microphone signals and the first electrical signal to produce a second electrical signal, and transmitting the second electrical signal as recited in independent claim 18. Prior art of record fails to teach, or renders obvious, alone or in combination, a method of operating an audio conferencing system. The method comprises receiving a plurality of microphone signals, selecting at least two groups of microphone signals from the plurality of microphone signals, and processing each of the at least two groups of microphone signals using an adaptive beamforming technique. The processing produces an output signal for each of the at least two groups of microphone signals, and combines the output signals as recited in independent claim 30.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Q. Tieu whose telephone number is 571-272-7490. The examiner can normally be reached on Monday-Friday: 6:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Benny Q. Tieu
Primary Examiner
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